Feasibility Study: Electronic Pilot Reporting System

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Presentation Overview

- Review the planned feasibility study of EPIREPS:
  - What is EPIREPS?
  - EPIREPS Feasibility Study
  - Work plan
  - Deliverables

What is EPIREPS?

- Electronic pilot reporting systems (EPIREPS) characteristics:
  - Sensor packages, information processors, and communications equipment.
  - Carried aloft by participating aircraft
  - Reports weather conditions to ground-based receiving stations for distribution into a national system for dissemination of weather information.

What is the Benefit / Impact of EPIREPS?

- The FAA and NASA have concluded that EPIREPS systems may:
  - Enhance the accuracy and completeness of weather data and the resulting weather forecasts.
  - Improve aviation safety is anticipated as a result of these improved forecasts.
  - Provide other benefits to various groups or to society in general.

EPIREPS Problem Statement

- EPIREPS represent new technology:
  - It must compete in the market place to establish its usefulness in the context of all currently operating weather reporting systems.
- However, the integrated, market- oriented, business case that models and analyzes the success factors for EPIREPS has not been identified.

Examples of the Questions

- Aircraft owners will face additional costs associated with installing, operating and maintaining the EPIREPS equipment.
  - The motivation for aircraft owners to install EPIREPS equipment is not well understood.
- Weather providers may have alternative means to obtain weather data.
  - The comparative costs relative to EPIREPS information is not defined.

What is the Business Case?

- Weather data providers may produce new or enhanced market products using EPIREPS.
  - The business case for these enhanced products depends on the added value they bring to the users.
  - The benefit of EPIREPS information over current weather products and what specific population of users may benefit from these data is unclear.
  - Factors for this market-user population linkage require investigation and definition.

Policy Implications?

- Are there larger public benefit / policy issues for EPIREPS information?
  - EPIREPS technology is at the cutting edge of new arrangements between government agencies and national laboratories to develop a new national architecture for disseminating weather information.
  - Possible government policies or incentives to promote these new arrangements and the widespread adoption of EPIREPS technology may be needed.

Feasibility Study Work Statement

- Focus: General feasibility study of EPIREPS acceptance by operators of commuter aircraft and the general aviation community.
  - Preliminary analysis suggests that these aircraft operate in regions of the atmosphere where the most valuable weather data could be obtained.

Specific Study Focus

- Specifically, this study will identify and benchmark the general business case for EPIREPS including current technical costs and implementation issues.
  - The study shall specifically address both market factors and technical issues likely to influence the adoption of EPIREPS technology by the targeted aviation segments.

Time Schedule and Steps

- Begin Summer 2000 and finish summer 2001.
- Broad Involvement required:
  - As we review the planned study steps, consider your involvement and participation.
- Steps discussed in the following slides.

Literature Review

- Literature search using both traditional library and internet sources
  - Identify the current status of EPIREPS research efforts, identify related publications, and identify points of contact for subsequent steps.

Technology Benchmark

- Benchmark EPIREPS technology in the context of current aircraft systems and the long-range plans of airframe manufactures:
  - Identify a baseline EPIREPS equipment list consisting of a sensor suite, communication hardware, and a set of weather data.
  - Use baseline configuration to identify incremental costs for the target market segments and identify airframe manufactures equipment plans that may impact EPIREPS adoption on new aircraft.

Commuter and GA Markets

- Commuter and general aviation market analysis:
  - Develop and deploy appropriate market analysis tools to assess the motivations for owners of commuter and general aviation aircraft to equip for EPIREPS.
  - Identify the perceived benefits of EPIREPS, acceptable EPIREPS costs, and business case the for the targeted aviation segments.

Competitive Weather Data

- Develop a cost/benefit metric for EPIREPS weather data :
  - Identify sources of weather data that may compete directly with EPIREPS and determine the costs of these data sources.
  - Identify potential users of EPIREPS weather data and current users of competing weather sources. Determine how they benefit from weather information and how benefits are valued.

EPIREPS Weather Products

- Identify the weather product business case:
  - Analyze the marketability of EPIREPS information and the role that commercial providers of weather information may play.
  - Examine issues of market costs and product viability for EPIREPS weather products.
  - Compare business models for current airborne weather data providers for EPIREPS implications.

Policy Issues

- Identify potential EPIREPS policy issues:
  - EPIREPS data is potentially valuable both within and outside of the aviation community.
  - Examine the distribution of EPIREPS costs and benefits among the potential beneficiaries.
  - Identify government policies, government incentives, interagency agreements, and options that may be appropriate or required to promote market acceptance of EPIREPS.

Integrated Business Case

- Develop integrated business case:
  - Based on information from the previous steps, develop an integrated business case for EPIREPS.
  - Identify strengths, weaknesses, and issues for EPIREPS as a competitive market product.

Involvement Solicited

- Broad participation in this study is a necessity. Please contact us if you are willing to be involved:
  - Weather information
  - Commuter or GA operator or airframe manufacturer
  - Industry groups
  - Policy issues
  - Equipment, sensor, avionics producers
  - others